

# Florida Natural Areas Inventory

*Tracking Florida's  
Biodiversity*



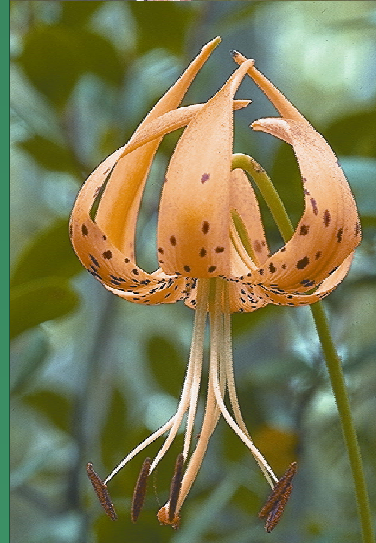
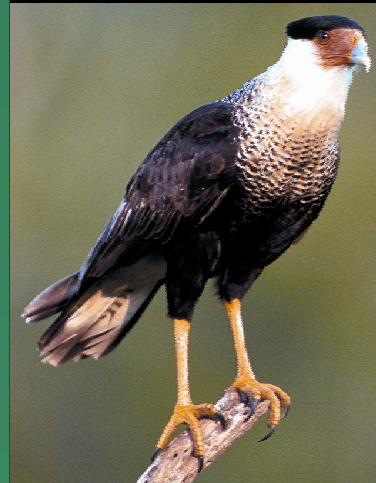
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# Mission

Collect, interpret, and disseminate ecological information critical to the conservation of Florida's biological diversity.



# NatureServe

- NatureServe's Member Programs operate across the Americas to distribute authoritative information critical to conservation
- Member Programs use standard methods for collecting and managing biodiversity data
- Over 800 scientists and technology specialists working locally

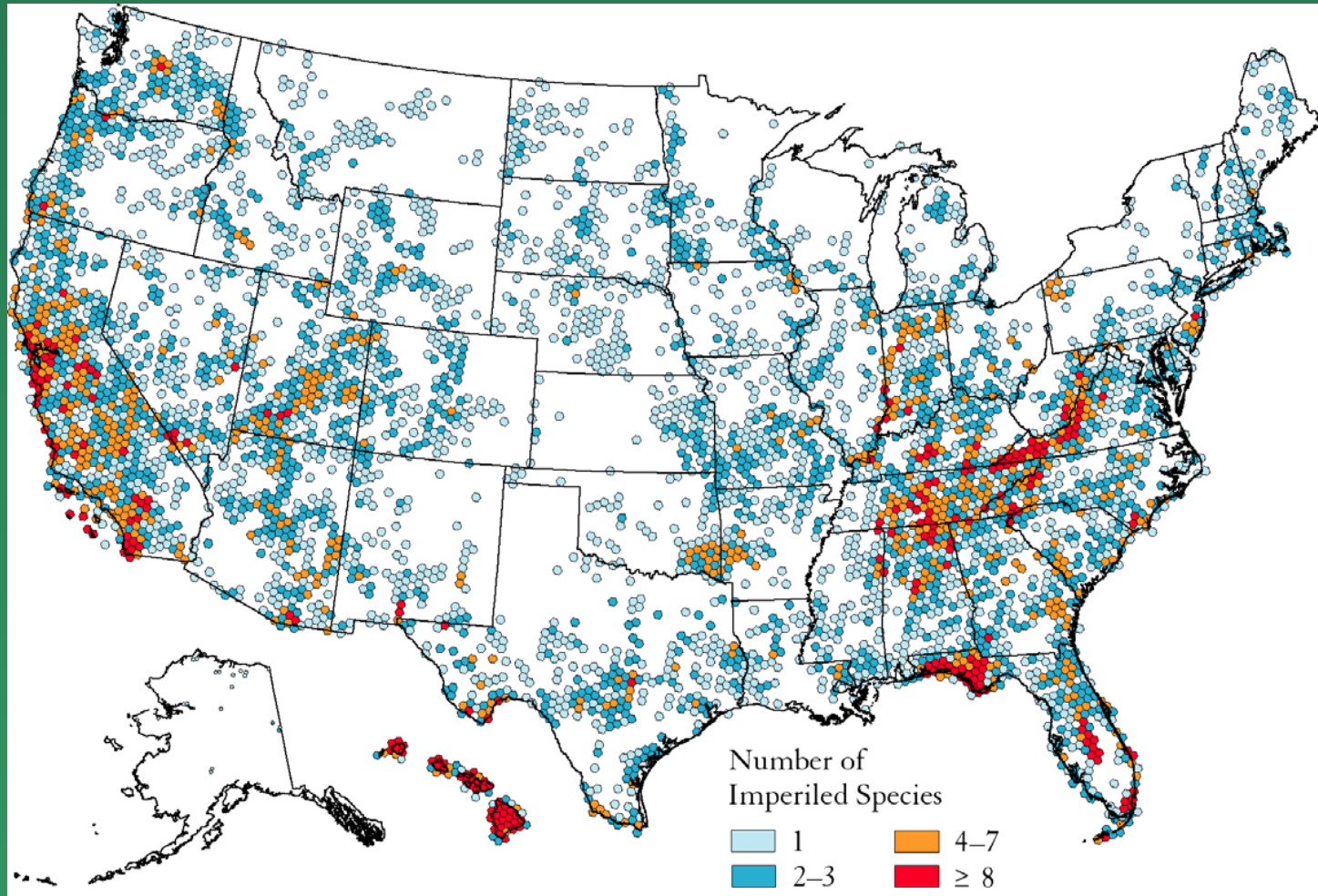




“The mission of the Department of Defense is more than just aircraft, guns, and missiles. Part of the defense job is protecting the lands, waters, timber, and wildlife—the priceless natural resources that make this great nation of ours worth defending.”

General Thomas D. White  
Air Force Chief of Staff  
1957-1961

# Taking a National Perspective



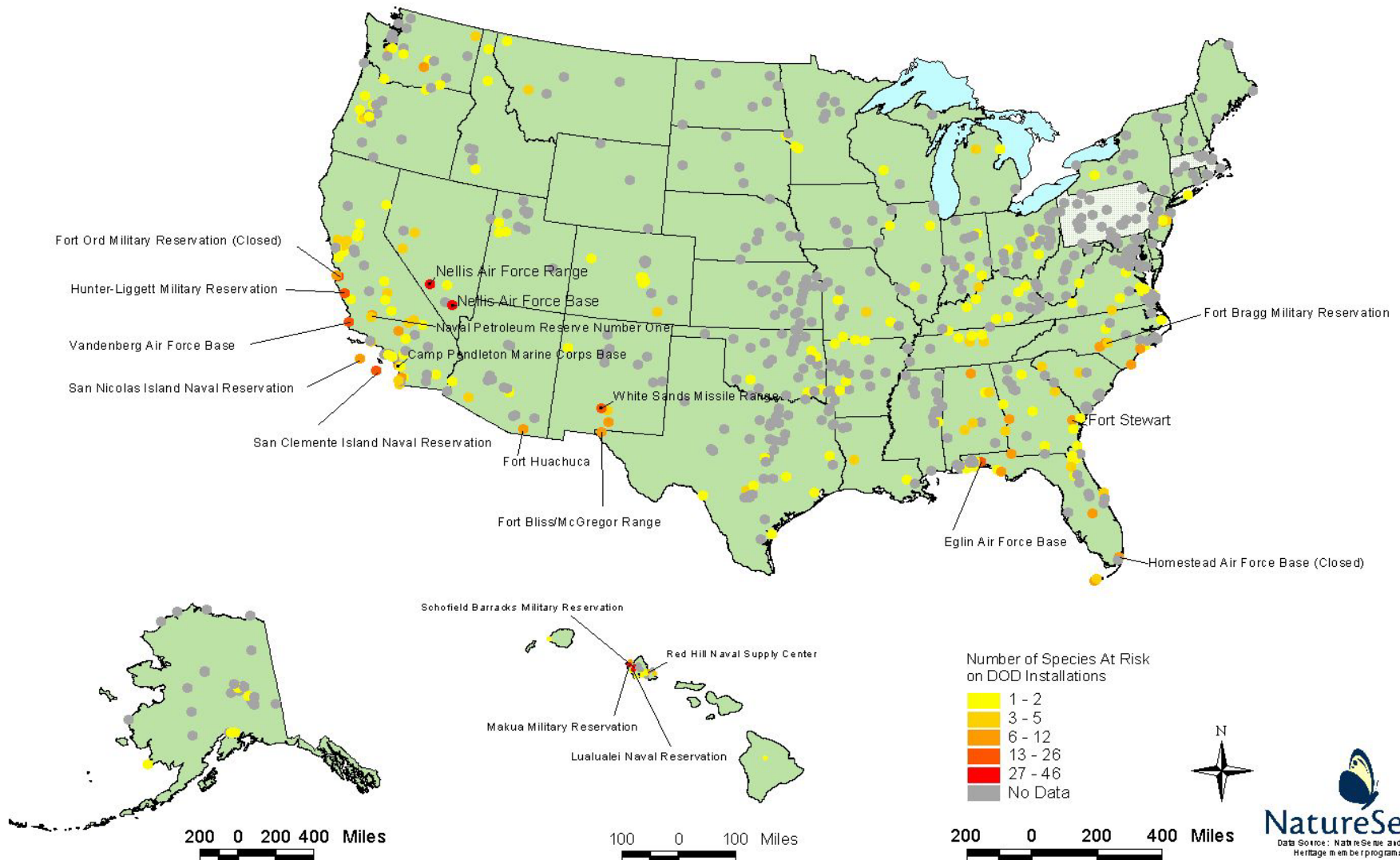


# A National Perspective: Analysis of Endangered Species on Federal Lands



# Number of Species at Risk on DOD Installations

(20 installations with highest number of Species at Risk are labeled)





# Types of Data Tracked by FNAI

- Rare species occurrences
- Wildlife aggregation sites
- Rare or high quality natural community occurrences
- Conservation lands
- Environmental land acquisition projects
- Potential Natural Areas

# Rare Species Occurrences

FNAI tracks:

- 471 rare plants
- 223 vertebrates
- 258 invertebrates

FNAI has more than 22,000 specific location records for rare species

















# Rare Species Records

- Scientific and common names
- Global and state rarity ranks
- Federal and state legal status
- Location information
- Description of the site
- Specific information about the plant or animal
- Date of observation
- Surveyor



*Cape Canaveral Air Station*



# Wildlife Aggregation Sites

- bird rookeries
- manatee  
aggregation sites
- migratory bird  
concentration sites



# Natural Communities

- FNAI has its own natural community classification
- 82 different natural community types described and ranked according to rarity and endangerment
- about 5000 occurrences documented in FNAI data base





# Rare Species and Natural Community Records

- Every record in the Inventory data base has a reliable, documented source; no records are based on anecdotal information
- Biologists collect, interpret, and process the data



# Conservation Lands

- Federal holdings, such as National Parks, National Forests, and National Wildlife Refuges
- State holdings, such as State Parks, State Forests, and Wildlife Management Areas
- Local government holdings
- Holdings of private conservation organizations
- More than 1400 conservation holdings in data base



*Eglin AFB*

# Types of Ecological Studies

- Rare species inventories
- Natural community mapping/ecological characterization
- Historic vegetation analysis
- Fuel load surveys
- Exotic species surveys
- Demography and population dynamics
- Wetlands mapping
- Conservation planning/prioritization











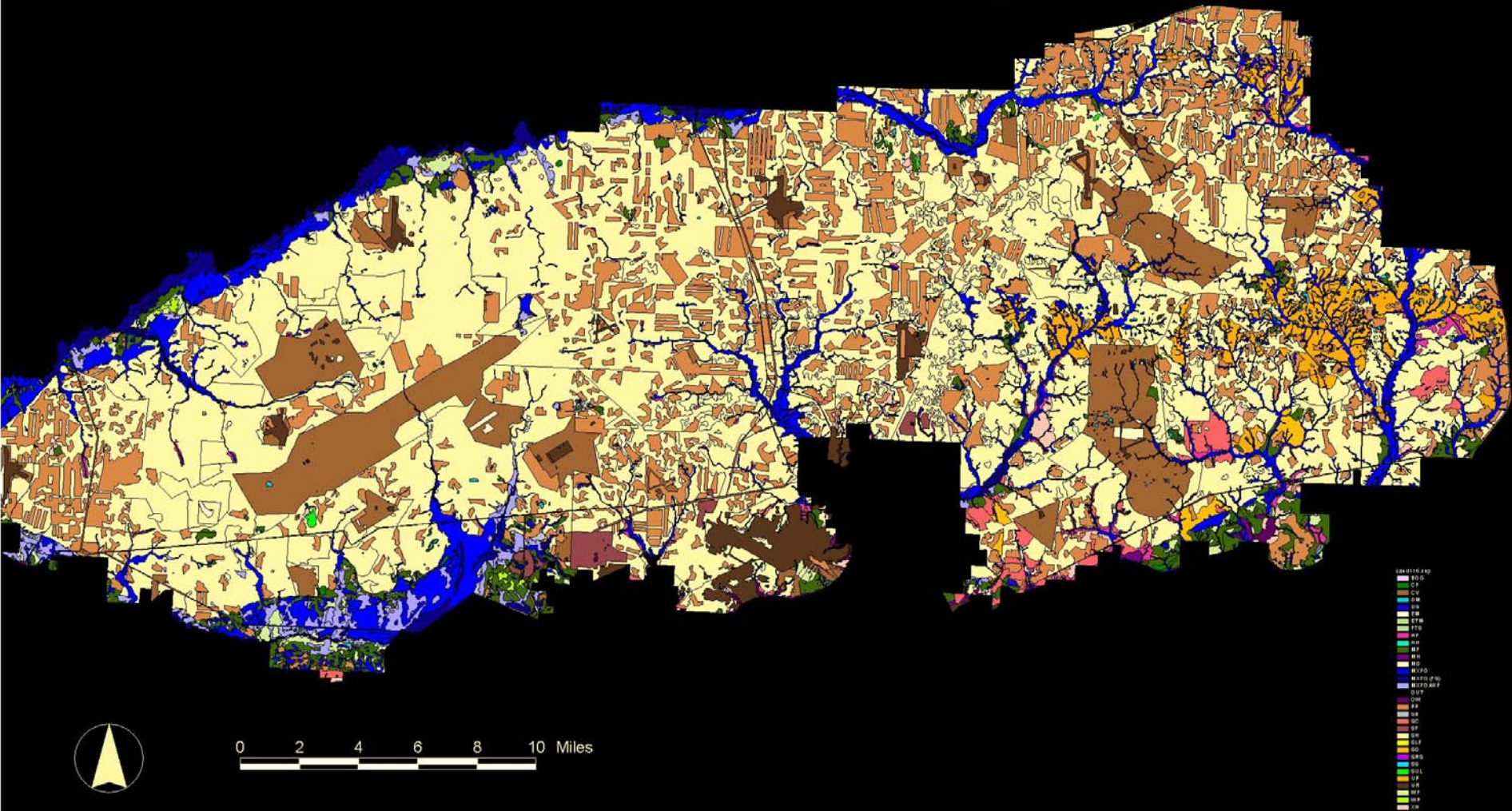




# Mitigation Planning

- Identification of the “restorability” of different types of wetland systems.
- Development of biological and ecological criteria for measuring the quality and condition of mitigation sites.
- Guideposts for assessing changes in quality and condition over time.

# Natural Communities of Eglin AFB



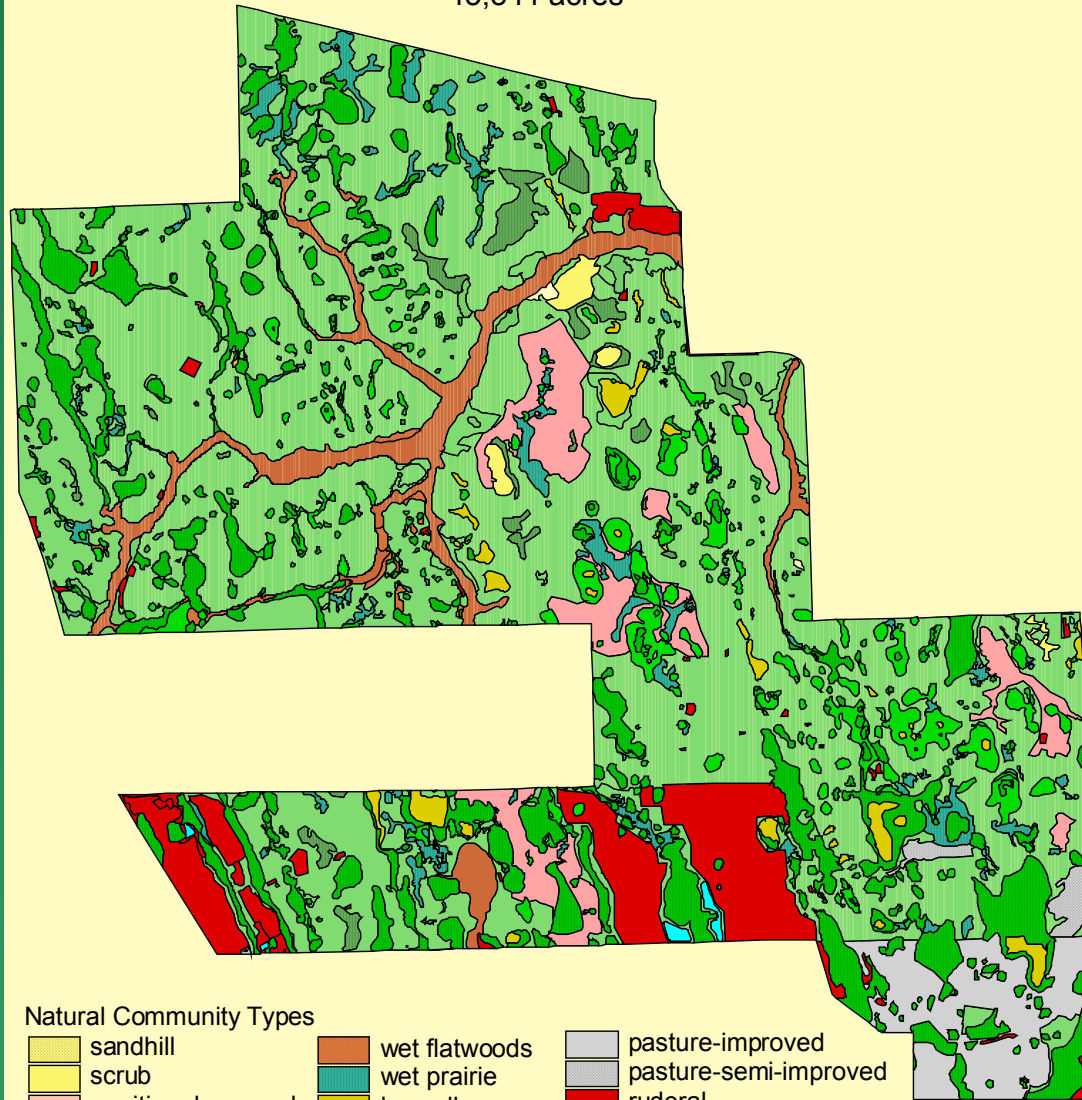


989 natural  
community  
polygons

Minimum  
mapping unit 0.1  
acre

# Triple N Ranch WMA Osceola County

15,541 acres



## Natural Community Types

sandhill	wet flatwoods	pasture-improved
scrub	wet prairie	pasture-semi-improved
maritime hammock	baygall	ruderal
mesic flatwoods	bottomland forest	
mesic hammock	floodplain forest	
scrubby flatwoods	depression marsh	
hydric hammock	dome swamp	
dry prairie	open water	

# 985 Data Collection Points

## Triple N Ranch WMA Osceola County 15,541 acres



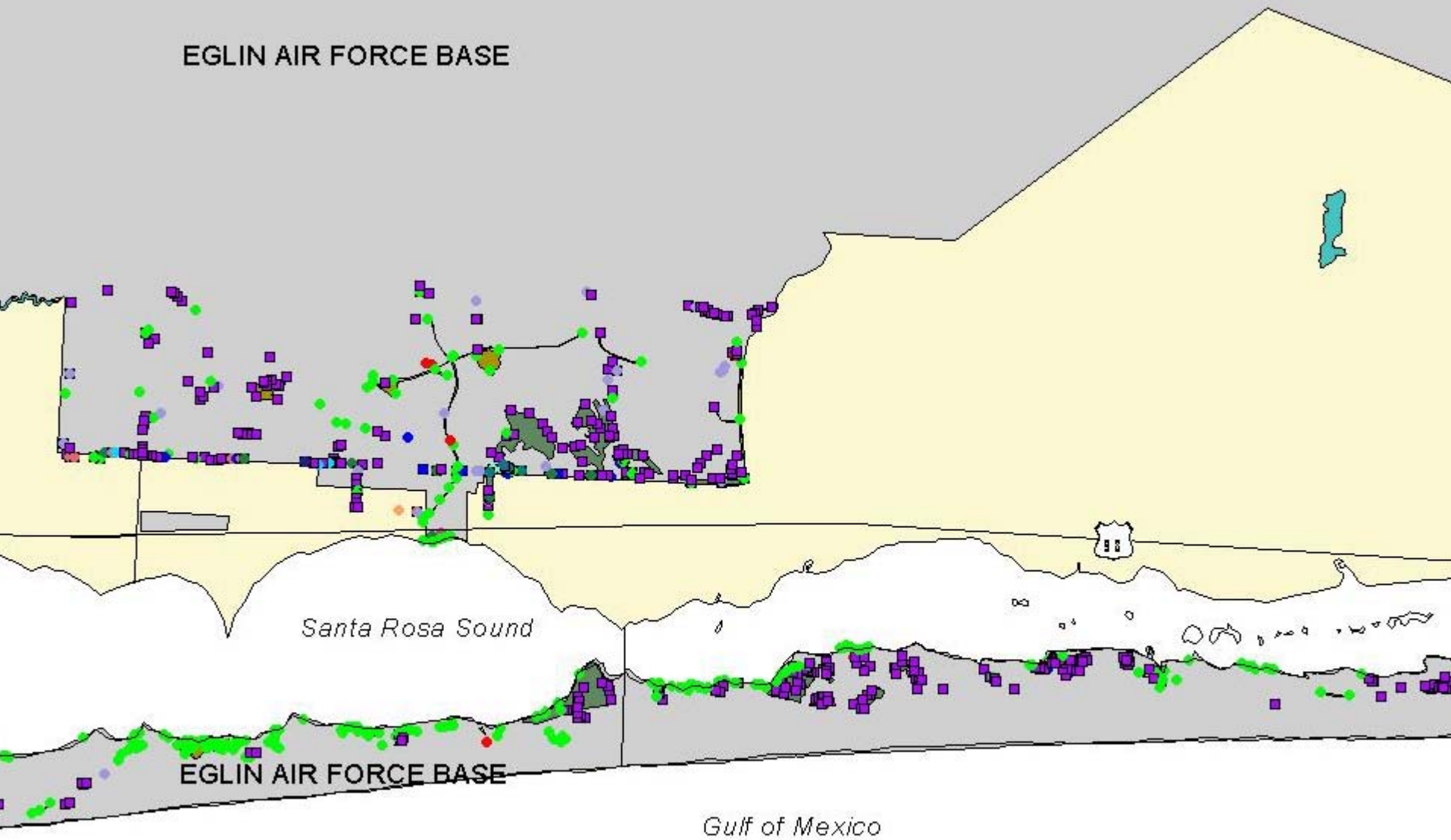
● Data Collection Points



Date	20030522
Field_id	560
Point_id	183
Data_type	datalogger
Frst_nc	wet flatwoods
Rud_type	ZZ
Includednc	ZZ
Historicnc	ZZ
Canopy_cov	6-25%
Canopy_ht	>30-45 ft
Basalarea	40
Canopy_age	mature
Subcan_cov	<1%
Subcan_ht	>15-30 ft
Tshrub_cov	<1%
Tshrub_ht	6-9 ft
Sshrub_cov	76-100%
Sshrub_ht	>3-6 ft
Totalshrub	76-100%
Dwarfshrub	1-5%
Palmetto	51-75%
Herb_cover	<1%
All_gramin	<1%
Wirygramin	none
Legume_cov	<1%
Litter_cov	51-75%
Lichen_mos	none
Epiphyte	none
Vine_abund	occasional
Bare_soil	none
Organic	1-2"
Aerialfuel	none
Fine_fuel	low
Med_fuel	moderate
Heavy_fuel	low
Fuel_conti	continuous
Lastfireyr	<2 yrs
Plotdist_1	natural
Plotdist_2	ZZ
Plotdist_3	ZZ
Plot_hydro	ZZ
Plot_sever	light
Polydist_1	natural
Polydist_2	firebreaks
Polydist_3	ORV trails or roads
Poly_hydro	ZZ
Poly_sever	light
Weedycover	none
Exoticscov	none
Comments	

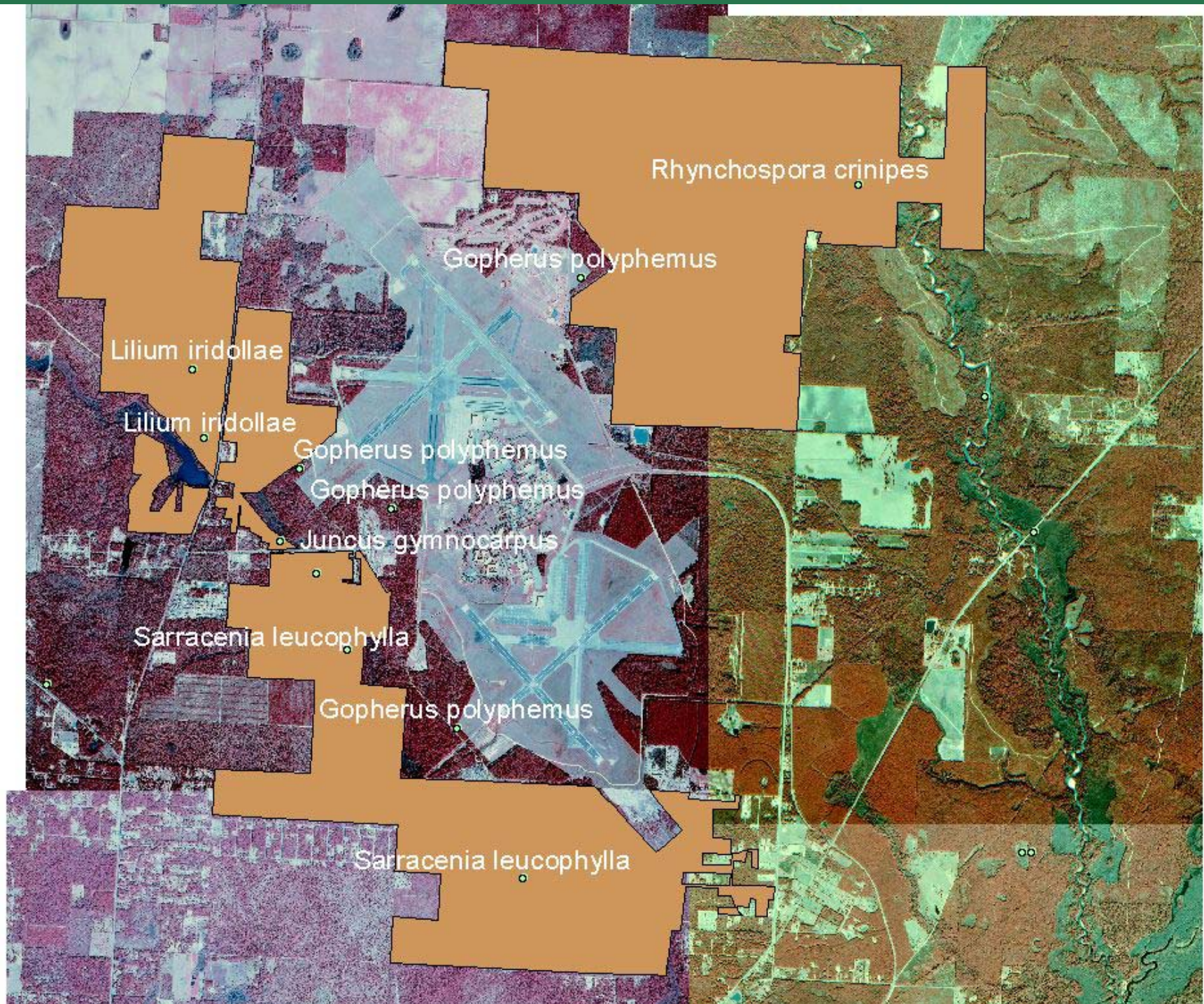
# Data Points

- GPS latitude and longitude
- 52 attributes
  - Composition
  - Structure
  - Fuels
  - Fire
  - Disturbance
  - Exotics



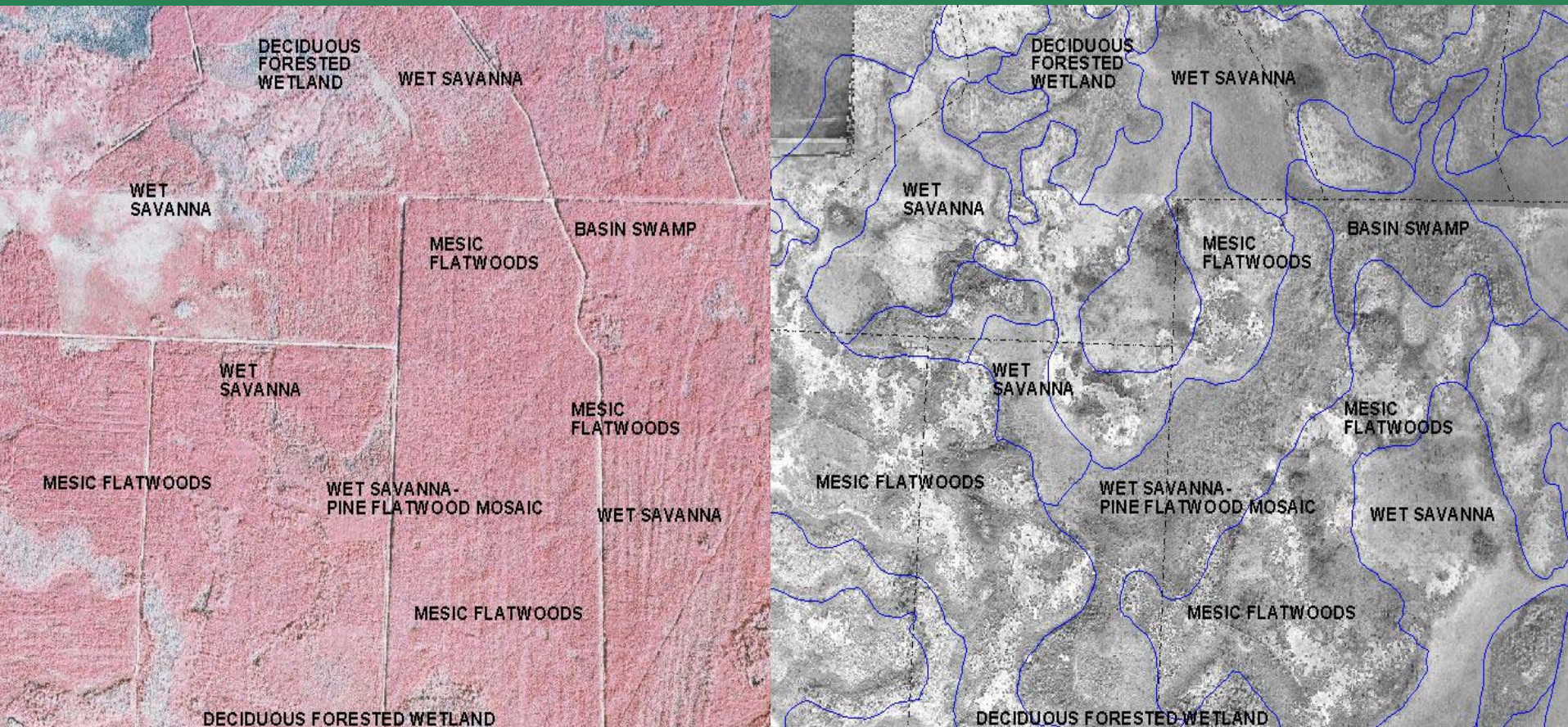
## Exotic Species Mapping







# Tate's Hell State Forest Historic Vegetation Project





Species	Global Rank
Conradina brevifolia	G2Q
Haliaeetus leucocephalus	G4
Hypericum cumulicola	G2
Liatris ohlingerae	G3
Paronychia chartacea	G3
Polygonella basiramia	G3
Polygonella myriohylla	G3
Schizachyrium niveum	G1
Aphelocoma coerulescens	G3
Drymarchon corais couperi	G4T3

Species	Global Rank
Cicindela scabrosa	G3
Conradina brevifolia	G2Q
Haliaeetus leucocephalus	G4
Liatris ohlingerae	G3
Polygonella myriohylla	G3
Aphelocoma coerulescens	G3
Drymarchon corais couperi	G4T3

Species	Global Rank
Cicindela scabrosa	G3
Haliaeetus leucocephalus	G4
Liatris ohlingerae	G3
Polygonella myriohylla	G3
Drymarchon corais couperi	G4T3

# Eglin Air Force Base and FNAI

- Partnership for Environmental Management since 1990
- Encroachment & Buffer Planning Support
- Multitude of Services – INRMP, inventories, training, ecosystem analysis, invasive species monitoring





# Eglin Air Force Base and FNAI

- Inventory and classification: Longleaf pine forests, Twenty miles of pristine barrier islands, Best remaining global examples of steephead creeks
- Critical habitat for T&E species: red-cockaded woodpecker, bald eagle, indigo snake, gopher tortoise, the Florida black bear, 67 species of rare plants
- Proactive conservation management programs have helped avoid listing of the Santa Rosa beach mouse and several other species from federal listing

# Eglin Air Force Base and FNAI

- Compatible uses accomplished: Base functionality optimized with ecosystem and species protection, reduced regulation
- 97% mission-delay-avoidance rate
- Process improvements saved \$300K annually
- Landscape Disturbance Model developed to illustrate and manage varying fire regimes on the Eglin landscape





# NatureServe Vista: The Basics

- A combination of software and services that support a conservation planning process
- Software: Fully documented ArcView 9 extension with beta release July 1, 2004
- Science services can be obtained from NatureServe, Natural Heritage Programs, and environmental consultants
- The software will be extended to automate more of the conservation planning functions

# Relevant Questions Vista Can Address

## **Is this plan, project, or activity in conflict with important elements?**

- Where are the elements located and what is their viability and confidence in occurrence?
- What activities are they compatible and incompatible with?
- Where else might my activity be located free of known conflicts?

## **Where in the region can important elements be accommodated**

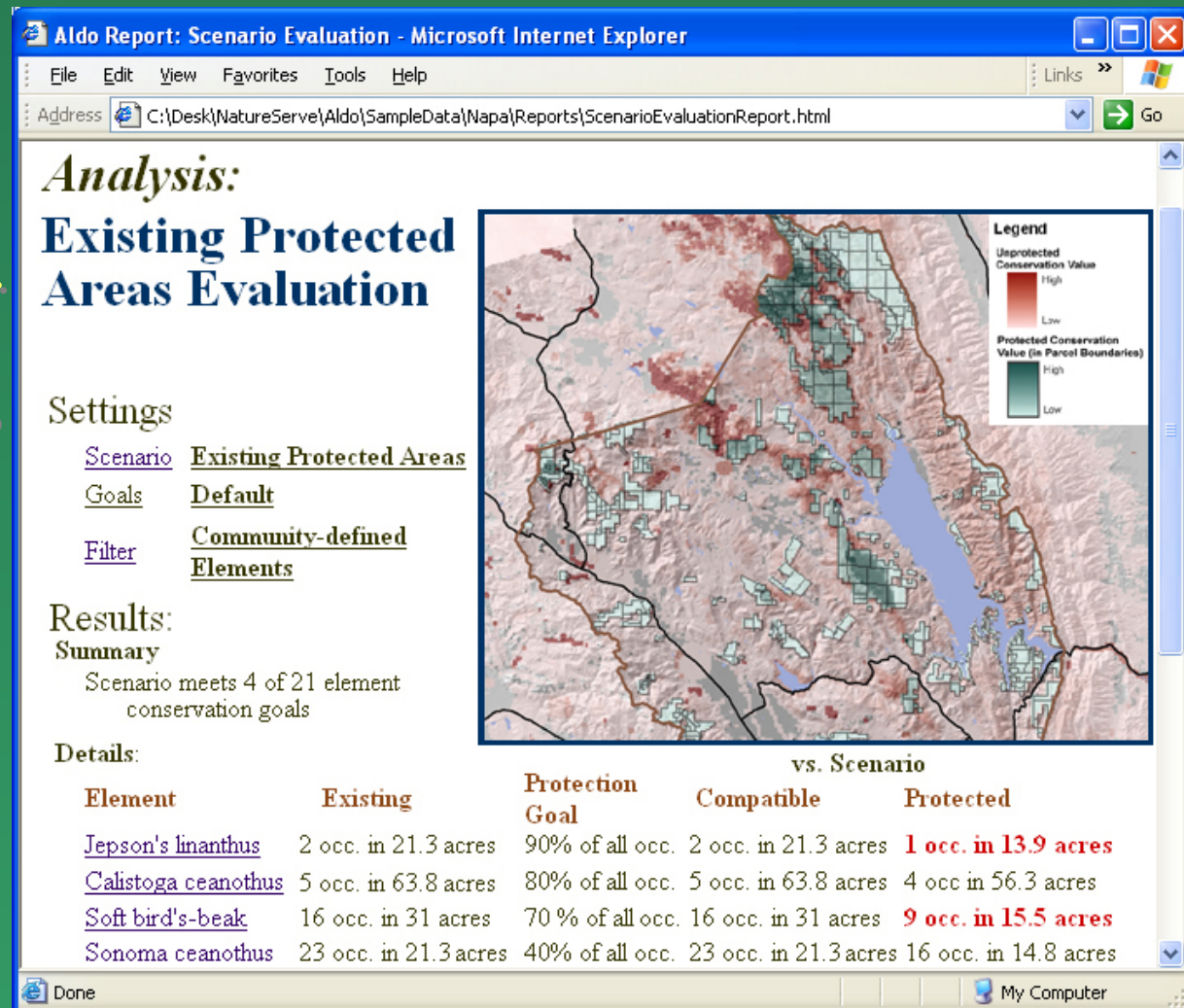
- Where are the highest value areas for the elements?
- How compatible are the set of plans, regulations, & intentions for the regional players with the important elements?
- Where are the areas of highest conflict and



# How Are We Doing?

## Where Can We Do Better?

- Reports can compare scenarios to baseline conditions and to goals.
- How much of my goal is met by any scenario?
- Where is compatibility insufficient
- Where is protection type insufficient



# Opportunities for collaboration

- Rare species inventories
- Natural community mapping
- Historic vegetation analysis
- Conservation analyses
  - Encroachment
  - National planning





# Florida Natural Areas Inventory

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